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Challenges, success factors and strategies for women's career development in the Australian construction industry

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Abstract

Construction is traditionally a male industry. Women have long had difficulties entering or advancing their career in construction. Evidence shows that a diversified workforce with gender balance will bring about higher levels of productivity. Despite the importance of this issue, there have been limited studies on women's career development in construction. This study aims to investigate women's career development in the Australian construction industry, with objectives to evaluate the challenges and success factors of women's career development in the construction industry and provide strategies for narrowing the gender imbalance. A mixed approach of questionnaire survey and interview were conducted with female practitioners in the construction industry. Forty-three completed questionnaires were received and 10 interviews were conducted. Stress, family-work balance, and negative perception towards women in construction were the top three challenges identified. Dedication, determination, and independency were the top three success factors of women in construction. This study recommends construction employers consider providing personal development programs and flexible working arrangement for their female employees. Significance of this study lies on contributing to understanding women's career development in construction. Findings will be useful for government and professional institutions to promulgate strategies for advancing women's career development in construction.

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Keywords

Women, construction, career development

Introduction

Construction is the third largest industry in Australia, employing 1,055,200 construction workers which accounted for 9.1% of total employment in February 2015 (Australian Government Department of Employment 2016). The construction industry is largely male dominant. As of February 2015, only 11.1% of the workforce in the construction industry was female, with 5.3% employed full time and the remaining 5.8% part-time (Australian Government Department of Employment, 2016). The percentage of women engaged in construction has not changed much in the past ten years. Notably, women leave the construction industry at a rate almost 40% higher than men (Prime Minister of Australia, 2016).

According to the Australian Government Department of Gender Equality Agency, 5.6% of women working in the construction industry were underemployed (WGEAgovau, 2016), referring to the situation where a person is working fewer hours when they are willing and available to work for more hours. Furthermore, although an increased number of women are progressing into the labour force in general, these women have not been seen to be able to reach top corporate management tiers (Singh and Vinnicombe, 2004). NAWIC (2013) found that many challenges faced by women in the construction industry are directly or indirectly related to gender bias (NAWIC, 2013). There is an underrepresentation and under-recognition of women in construction.

Although government, industry, and educators actively attempt to recruit young women in non-traditional occupations, a review of government statistics indicates that they are having minimal success. Moving forward from the recruiting process, which seems to be the focus for most, initiative has not been taken past the point of entering the construction industry and providing equal opportunity for development of these women. Perhaps the greatest impediment lies in the historic culture of the construction industry, which is so reluctant to change in allowing women to progress in their careers (UNSW, 2016).

It is important to encourage women's participation in the construction industry. Evidence shows that gender diverse workplaces tend to be more productive and deliver better returns to the company's bottom line (Prime Minister of Australia, 2016). Without gender diversity, the construction industry is missing out on attracting and retaining the best talent (Prime Minister of Australia, 2016). Hence, recently the Australian government launched a pilot mentoring programme to support women in the construction industry. This indicates that improving gender balance in construction is a timely problem that draws the attention of the Australian government.

Despite this, most of the existing studies on women's career development in construction were conducted in the United States or the United Kingdom in the last decade. Apart from the recently released UNSW (2016) and Francis (2017), there is limited research on women in the Australian construction industry. There is a lack of up-to-date understanding of the challenges and success factors that contribute to women progressing in their construction career.

To design effective strategies for improving women's career development in the construction industry, there is an urgent need to better understand the challenges faced by women in

construction and the factors contributing to their career success. Strategies for supporting women's career develop in construction should address or alleviate the challenges faced by women in construction and cultivate or strengthen the factors contributing to their career success. However, there is limited evidence indicating the effectiveness of existing strategies and their contributions in alleviating the challenges or strengthening the factors leading women's success in the construction industry.

This paper aims to evaluate the challenges that women face in the Australian construction industry; to evaluate the success factors for women to advance their career in the Australian construction industry; and to evaluate the existing strategies for better women's career development in the Australian construction industry. Significance of the study lies on filling the research gap of limited up-to-date studies on women in the Australian construction industry and providing research-evidence based strategies and recommendations for the industry, professional bodies and the government to advance women's career in construction and thus improve gender diversity in construction.

Challenges for women in construction

Despite studies on challenges for women in construction, these were neither up-to-date nor conducted in the Australian context. Understanding and alleviating the challenges for women in the Australian construction industry will encourage more women to join the industry and advance their career.

In a comparison of existing literature, as shown in Table 1, women face a whole range of discrimination while undertaking a career in the construction industry. The predominant barrier is related to the perception of sexual harassment. Amaratunga, et al. (2006) indicated that because the industry is male dominated, their values become the standard of the industry, such as extensive working hours, competition amongst colleagues, and self-sufficiency. Other issues include negative perceptions of women capabilities (Chun, Arditi and Balci, 2009); minimal recognition on project sites (Menches and Abraham, 2007); expectations to mimic males aggressive behaviours (Maskell-Pretz and Hopkins, 1997); absence of positive influences such as lack of role models/mentors (Yates, 2001); difficulty in finding a balance between personal goals and professional goals (quality of work life, family/work life balance) (Hatipkarasulu and Roff, 2011); slow career progression (English and LeJeune, 2012); high stress levels linking to career, lack of recognition and encouragement from supervisors, asked to do repetitive minor tasks, undervalued and low potential for career advancement (Loosemore and Waters, 2004); discrepancies between women's perceived societal roles and the image of the construction industry, unfair judgement of training needs, misjudged on performance compared with male counterparts, being restricted to clerical/administration roles (Dainty and Lingard, 2006).

Dainty, Neale and Bagilhole (2000) also found that for women to survive in the male-dominated industry, women have three choices: (1) act like men, or (2) lower their goals and assume secondary positions, or (3) surrender and move to work elsewhere. In addition, it was difficult for women to reach high-level positions for two main reasons: (1) men's intentional social isolation, and (2) men downplaying women's contributions to maintain their positions in the male-dominated industry (Dainty, Neale and Bagilhole, 2000).

An underlying career challenge/barrier prominent in the current research is around women having difficulty balancing personal goals and professional goals (Moore, 2006). It is argued

Table 1 Challenges of women in construction identified from the literature

	Maskell-Pretz and Hopkins (1997)	Bagilhole, Dainty and Neale (2000)	Dainty, Neale and Bagilhole (2000)	Yates (2001)	Lingard and Lin (2004)	Loosemore and Waters (2004)	Amaratunga, et al. (2006)	Dainty and Lingard (2006)	Moore (2006)	Menches and Abraham (2007)	Chun, Arditi, and Balci (2009)	Worrall, et al. (2010)	Hatipkarasulu and Roff (2011)	English and Le Jeune (2012)	NAWIC (2013)
Sexist attitudes, behaviours, and perceptions		√								√		√			√
Long working hours							√								√
Competition in staff							√								
Autonomy							√								
Isolation on job sites								√							
Negative perceptions of women capabilities								√			√	√			√
Small representation on job sites										√					
Expectation of mimicking males aggressive behaviour habits	√														√
Lack of role models/ mentors unfair assessment of training needs			√	√		√			√						√
Family/work life balance					√				√				√		√
Limiting Slow career progression / low potential for career advancement			√			√				√				√	
Stress						√									
Undervalued						√									
Institutionalized Discrimination (glass ceiling)									√						

that these barriers seem to be universally experienced among women who have families or have the intention of starting a family, regardless of the job role or profession (Moore, 2006). The construction industry is known for its high demand in work hours, making it difficult to meet demands of their positions with their construction organization and find enough time to enjoy their lives outside of work (Amaratunga, et al., 2006).

One of the studies conducted to date that focuses on women career challenges in Australia, is a discussion paper issued by the National Association of Women in Construction (NAWIC). The findings reflect similar results to studies conducted in other countries. NAWIC (2013) found several significant barriers that deterred women from choosing construction as a career. Misinterpretation and misperceptions of the construction industry are perpetuated by family, friends, teachers, career counsellors and the media with regard to the sustainability and suitability of women joining the construction industry. Another key challenge identified by NAWIC (2013) was that networking events and opportunities are centred around male friendly activities such as participating in or attending sporting matches, or involving drinking alcohol. There should be more opportunities for employees to develop their careers in a more relaxed environment.

The perception of the construction industry has placed additional pressure on females trying to pursue a career in this 'non-traditional' industry. Resistance to women in the construction industry was perceived within all areas of the industry, from business/administration to the job site. Although researchers had many different explanations, majority of the findings can be broadly placed under the heading of institutionalized discrimination.

Success factors for women in construction

Success factors in this study are the personal qualities and abilities that are perceived to be important in leading to women's career success in the construction industry. Helping women to acquire these success factors will facilitate their career success in construction. Success factors for women in construction are shown in Table 2. Findings by Moore (2006) and Fernando, Amaratunga and Haigh (2014) show that the ability to work with people, dedication, adaptability, leadership, and integrity/honesty are positively influencing women's career success. These findings confirm that soft skills are very important for career success while hard skills are essential thereafter. Confidence or self-efficacy is one of the personality traits carrying women through their careers in the construction industry. There was also a repetitive occurrence in the research that role models, mentors or other who supported women in their careers had a positive influence in their career success.

Self-efficiency is related to academic ability, expressed vocational interests and a range of perceived career options (Betz and Hackett, 1981). In particular, Mathieu, Sowa and Niles (1993) found that women who participate in a 'non-traditional' occupation demonstrate the highest level of career self-efficacy. Moore (2006) confirmed this and found that the primary source of confidence was derived from within themselves, secondly the influence of people they worked with (mentors), and finally, additional education to give more confidence in their roles.

Role models, mentors or significant others have been identified in research as the most valuable resource in a women's career development and profession (Moore, 2006; Fernando, Amaratunga and Haigh, 2014; Ericksen and Schultheiss, 2009). Role models are beneficial for individuals to learn from by being present and assist with emotional support and verbal encouragement. In particular, mentors, defined as typically senior people in an organization, help junior individuals navigate psychological and career related issues.

Table 2 Success factors of women in construction identified from the literature

Success factors	Moore (2006)	Fernando, Amaratunga and Haigh (2014)	Ericksen and Schultheiss (2009)
Organisation	√		
Independence	√		
Determination	√		
Creativity	√		
Self-efficacy/ Self Confidence	√	√	
Conscientious	√	√	√
Dedication		√	
Responsible	√		
Practical	√		
Creative (open to new Ideas)	√		
Kind (agreeableness)	√		
Adaptability	√	√	
Communication Skills	√	√	
Leadership	√	√	
Integrity/ Honesty	√	√	
Influence of others (mentors)		√	√
Ability to network		√	

STRATEGIES FOR IMPROVING CAREER DEVELOPMENT OF WOMEN IN CONSTRUCTION

Strategies are possible actions to be taken by different parties to support women's career development in the construction industry. Reviewing existing strategies for supporting women in construction will help promulgate the research of evidence-based strategies in the future. As shown in Table 3, a common recommendation for recruiting women in construction was to invest in early attraction. Data suggested promoting the construction industry to women at an early stage enables them to make an informed decision (NAWIC, 2013). Early attraction via promoting the industry at high schools and in the community to show youth the various disciplines involved in the construction industry and where it can take them, was also suggested by Moore (2006). Furthermore, emphasising to adolescence the creative and problem-solving aspects of the industry and acknowledging that the industry does not consist of mathematics and science or fieldwork only could be investigated. Fernando, Amaratunga, and Haigh (2014) suggested that it is important to provide training programs such as team building, workshops and seminars working with project team members, communication skills development programs.

Table 3 Strategies for improving career development of women in construction identified from the literature

Strategies	NAWIC (2013)	Moore (2006)	Fernando, Amaratunga and Haigh (2014)	Worrall et al. (2010)
Invest in early attraction	√	√	√	
Provide role model	√	√	√	√
Adopt diversity reporting	√			
Connect KPIs to productivity (not hours)	√			√
Diverse forms of networking	√	√		√
Embrace a genuine commitment to flexibility	√	√	√	
Training		√	√	
Improve communication	√			
Support career development	√	√		√
Broaden thinking of individuals in the industry		√		
CPD for women				√
Develop participation in support networks		√		

Attracting female students to undertake studies in a construction position is just half the battle. Retaining them through studies and then into a career is equally important to the future of the construction industry. All studies suggested that developing a formal mentoring program would be beneficial (Fernando, Amaratunga and Haigh 2014; NAWIC, 2013; Moore, 2006). This would encourage senior members to mentor junior members upon entry and assist them to navigate company policies and communicate on more of a personal level regarding challenges they are facing. Another proven strategies in the career development of employees (for men and women) ongoing active and efficient training and career development programs (Worrall, et al., 2010).

Flexibility was highlighted which entails the industry becoming more conducive to women having a family (e.g. hours friendly, job sharing, the flexibility of schedules). NAWIC (2013) suggested by introducing key performance indicators (KPIs) based on productivity rather than unofficial presentism merit based system will allow women to prove they can perform in a role without reliance on long working hours.

Previous research has covered a wide breadth of recommendations for further actions to be drawn upon. The biggest barrier to implementing these changes is the resistance to change itself (NAWIC, 2013).

Research Method

DATA COLLECTION

A questionnaire survey and semi-structured interviews were conducted for data collection. The mixed research methods allow interrogation and triangulation of both quantitative and qualitative data.

The questionnaire consists of four parts, namely personal profiles, challenge, success and recommendations for women's career in construction. Respondents were asked to evaluate statements regarding challenges, success, and recommendations for women's career development in construction with a 5-point Likert scale, where 1 represents strongly disagree and 5 represents strongly agree. In the questionnaire, each variable of challenges, success factors and strategies for improving women's career development in the literature was presented as a self-explanatory statement for the respondents to rate their importance.

The survey was administered using the snowball sampling method. Targeted respondents were women working in the construction industry who have completed or were studying for a construction-related degree. Data collection started with the authors' personal networks, and participants of the NAWIC Queensland Chapter 2016 end-of-year event. Respondents were invited to distribute the survey link to their respective networks. Moreover, the survey was posted on the NAWIC – Queensland Chapter Facebook page.

Interviews were conducted with female practitioners in the construction industry to triangulate the findings of the survey. Interviewees were selected based on the same criteria as selecting targeted survey respondents, i.e., they are working in the construction industry, and have completed or are currently studying for a construction-related degree. Interview invitations were sent to the authors' personal networks, who were also invited to suggest other potential interviewees. Interview questions were open-ended which allowed the interviewees to provide detailed examples from their experience. This would help discover new factors not identified in the literature and relate directly to women in Australia.

DATA ANALYSIS

A total of 43 completed questionnaires were received. The data were analysed with SPSS to evaluate the challenges, success factors, and strategies for improving women's career development in construction, using descriptive statistics such as mean and ranking to show their relative importance. Multivariate Analysis of Variance (MANOVA) was then employed to examine whether personal attributes (i.e. age, occupation, work experience in construction, or career level) would have effects on the top three challenges, success factors, and strategies for women's career development in construction respectively. Dependent variables were the variables with the top three highest mean for challenges, success factors and strategies respectively. Significant MANOVA results were followed up with Tukey's post-hoc test. As a rule of thumb of sample size for MANOVA, the number in each cell (group) should be greater than the number of dependent variables (Hair et al., 2010). As shown in Table 4, the number in each group of the personal profile is greater than the number of dependent variables (i.e. 3 dependent variables). This indicates that data collected for this study meets the sample size requirement for MANOVA. The findings were then triangulated with semi-structured interviews.

Table 4 Survey respondents' personal profile (N = 43)

		No. of respondents (%)
Age	18-25	12 (27.9%)
	26-30	8 (18.6%)
	31-40	15 (34.9%)
	Above 40	8 (18.6%)
Occupation	Architect	7 (16.3%)
	Quantity surveyor	12 (27.9%)
	Engineer	4 (9.3%)
	Contractor	8 (18.6%)
	Others	12 (27.9%)
Work experience in construction	0-2 years	5 (11.6%)
	3-5 years	13 (30.2%)
	6-8 years	9 (20.9%)
	More than 8 years	16 (37.2%)
Career level	Junior	12 (27.9%)
	Middle	13 (30.2%)
	Senior and others	18 (41.9%)

A total of ten interviews were conducted to triangulate with the survey findings. Interview data was analysed with opening coding. Emerging themes with semantic meanings were coded as one category.

Results and Findings

RESEARCH PARTICIPANTS' PERSONAL PROFILE

The 43 survey respondents' personal profiles are shown in Table 4. The respondents represented a board spectrum of the construction industry. Around half of the respondents were aged below 30 with the remainder aged above 30. Respondents mainly worked as quantity surveyors, other construction-related professionals and contractors. More than one third of the respondents had worked in the construction industry for more than eight years.

The ten interviewees' personal profiles are shown in Table 5A. About half of the interviewees were quantity surveyors having worked in the construction industry for five years or less. Another half of the interviewees were in the middle/senior level. About 40% of them have more than 8 years' work experience in the construction industry, as contractors or others.

Both the survey respondents and interviewees reasonably represented a board spectrum of women practitioners in the construction industry.

Table 5A Interviewees' personal profile (N = 10).

Interviewee	Age	Occupation	Work experience in construction	Career level
A	18-25	Contractor	3-5 years	Junior
B	18-25	Architect	0-2 years	Junior
C	Above 40	Quantity surveyor	More than 8 years	Senior
D	31-40	Contractor	More than 8 years	Middle
E	31-40	Quantity surveyor	More than 8 years	Senior
F	31-40	Others	3-5 years	Middle
G	26-30	Quantity surveyor	0-2 years	Junior
H	18-25	Others	3-5 years	Junior
I	Above 40	Quantity surveyor	More than 8 years	Senior
J	18-25	Quantity surveyor	0-2 years	Junior

Table 5B Ranking of career challenges for women in construction

Career Challenges	Mean	Ranking
Stress	3.95	1
Difficult for family work life balance	3.91	2
Negative perceptions	3.84	3
Long working hours	3.79	4
Sexist Attitudes	3.74	5
Lack of role models	3.67	6
Isolation of construction sites	3.14	7
Mimicking male behavior	3.09	8

QUESTIONNAIRE SURVEY FINDINGS

Women in construction faced various challenges identified from the literature. As shown in Table 5B, the top three career challenges were stress (Mean = 3.95), difficult family work life balance (Mean = 3.91), and negative perceptions (Mean = 3.84).

Regarding the success factors of women in construction, Table 6 shows that dedication (Mean = 4.49), determination (Mean = 4.47), and independence (Mean = 4.44) were the top three success factors. It is noteworthy that mentor assistance was only ranked 9th even though mentor assistance is frequently mentioned in the literature.

In Table 7, the key strategies for improving women's career development in construction includes having a role model/mentor (Mean = 4.58), early attractions for female high school students to the construction industry (Mean = 4.30), and diverse forms of networking

Table 6 Success factors of women in construction

Success Factors	Mean	Ranking
Dedication	4.49	1
Determination	4.47	2
Independence	4.44	3
Practicality	4.33	4
Responsibility	4.23	5
Communication skills	4.17	6
Self-efficacy	4.09	7
Ability to network	4.00	8
Conscious	3.98	9
Leadership skills	3.98	9
Ability to seek mentor assistance	3.98	9
Confidence	3.95	12
Creativity	3.81	13

Table 7 Strategies for career development of women in construction

Strategies	Mean	Ranking
Role model/mentor	4.58	1
Early attraction	4.30	2
Diverse forms of networking	4.28	3
Commitment to flexibility	4.16	4
KPIs	3.74	5
CPD	3.07	6

(Mean = 4.28). Considering that lack of role models was not a highly-ranked challenge and mentor assistance was not a highly-ranked success factor, it is interesting to find that having a role model or mentor was considered the most beneficial strategy for improving women's career development in construction.

Table 8 shows the MANOVA results of the top three challenges (i.e. stress, difficult for family work life balance, negative perceptions), the top three success factors (i.e. dedication, determination, and independence) for women in construction, and the top three strategies (i.e. role model/mentor, early attraction, diverse forms of networking) for improving women's career development in construction based on age, occupation, work experience and career level respectively. As shown in Table 8, there is no significant difference in the perception of challenges faced by women in construction in terms of their personal attributes. Using Pillai's trace, there was no significant difference in the top three challenges of women in construction based on age [$V = 0.203$, $F(9, 117) = .946$, $p > .05$], occupation [$V = 0.359$, $F(12, 114) = 1.291$, $p > .05$],

Table 8 MANOVA results

Dependent variables	Independent variables	*F*	Hypothesis *df*	Error *df*	Pillai's Trace (*V*)	Sig.
Top three challenges	Age	.946	9	117	.203	.489
	Occupation	1.291	12	114	.359	.233
	Work experience	.567	9	117	.125	.822
	Career level	1.791	12	114	.476	.058
Top three success factors	Age	.734	9	117	.160	.677
	Occupation	2.321	12	114	.589	.011*
	Work experience	2.531	9	117	.489	.011*
	Career level	1.175	12	114	.330	.309
Top three strategies	Age	.822	9	117	.178	.597
	Occupation	.802	12	114	.234	.648
	Work experience	1.298	9	117	.272	.245
	Career level	1.366	12	114	.377	.192

Notes. * $p < .05$.

work experience in construction [$V = 0.125$, $F(9, 117) = .567$, $p > .05$], and career level [$V = 0.476$, $F(12, 114) = 1.791$, $p > .05$]. This indicates that women in construction across the board face similar challenges even if they are in different age groups, profession types, length of work experience in the industry and career development level. Challenges for women to remain in the construction industry do not significantly diminish even they have well-established their career in the industry.

As for success factors, using Pillai's trace, there was significant difference in success factors of women in construction based on occupation [$V = .589$, $F(12, 114) = 2.321$, $p < .05$] and work experience [$V = .489$, $F(9, 117) = .734$, $p < .05$]. Other personal attributes, including age, and career level, did not have significant effect on the mean differences of success factors for women in construction. Tukey's post-hoc test results (Table 9) indicated that respondents in different occupations had significantly different perceptions on determination, and independence. Women architects' perception of determination being the success factor of their career development was significantly higher than that of the women engineers. Women engineers' perception of determination being the success factor of their career development was significantly lower than that of the women practitioners working for contractors. Respondents with more than 8 years regarded determination being a success factor for women's career development significantly higher than those with 0-2 years.

Regarding strategies for improving women's career development in construction, there is no significant difference in the perception of the effectiveness of the existing strategies for improving career development of women in the construction industry (Table 8).

Table 9 Tukey's post-hoc test results (success factors)

		Mean difference	Std. Error	Sig.
Determination	Architect vs Engineer	1.11	.339	.019*
	Engineer vs Contractor	-1.13	.332	.013*
	0-2 years vs More than 8 years	-.88	.258	.008*
	3-5 years vs 6-8 years	.65	.218	.025*
	6-8 years vs More than 8 years	-.99	.210	.000*
Independence	Architect vs Engineer	1.00	.329	.033*
	Architect vs Others	.83	.250	.015*

Notes. * $p < .05$

INTERVIEW FINDINGS

In the semi-structured interviews, interviewees mainly expressed their challenges of working in the construction industry, and suggested strategies for improving their career development in the construction industry. The themes align with those identified in the literature and those ranked highly in the questionnaire survey.

Challenges for women's career development in construction

STRESS

Although stress is inevitable in the workplace, interviewees identified that in addition to stress arising from the job nature, there are pressures for women working in the construction trying to keep up with their male colleagues. Construction projects always have a tight time schedule and the workload is very demanding. One interviewee mentioned that "construction industry just like a roller coaster, fast and risky" (Interviewee E).

Additional stress comes from the fact that women are not often given the opportunity to progress their career. A number of interviewees expressed their struggles around not being accepted in the male dominated industry. Interviewee D expressed that "when a male entering the construction industry, they would be accepted straight away, whereas as females we have to earn the respect". Similarly, interviewee B expressed that there is additional stress to women in construction:

> [As women in construction, you need to] constantly fight to gain the knowledge you need because there is no person before you making that fight for you, we are the women leading this company to bring in the next lot of women, the men don't know how to treat us and we are constantly fighting to be recognised as on the same level" (Interviewee D)

> you will be taken seriously only if you go into a meeting thinking I have a right to be here and not should I be here (Interviewee I)

> you have to have your own back on a lot of things and have the confidence or else they will see that as a weakness and not take you seriously" (Interviewee D); and "you had to work really hard to gain confidence in the beginning and feel equal" (Interviewee H).

Interviewees repeated numerous times that they were pressured to put in extra effort and be overly prepared for their work; otherwise, they won't be taken seriously or they will be showing weakness because of their female identity.

FAMILY WORK LIFE BALANCE

Finding a balance between competing personal and professional goals was identified by the interviewees as the top challenge of career development for women in construction. Discussions around balancing career and personal goals were filled with emotion. Those respondents who had family or were planning to have a family expressed a great deal of concern about the high demands and pressure placed on their positions within their construction organisations and their responsibilities to their families. Some even spoke of challenges of finding enough time for their lives outside of work and meeting the expectations of their roles. As the female is generally the primary carer in a family, she has multiple responsibilities and respondents felt it was difficult to find family and work balance when undertaking a career in the construction industry as the males don't have the same responsibilities in the household and can dedicate more time to their careers.

Some of the comments include:

> …time off to have children, and question whether to go back to work and put them in day care or raise them yourself. I am lucky to have a supportive partner who understands the demand for the long hours in the industry (Interviewee C)

> I'm at the age now where I get worried about stopping to have a family because I will have to do extra work to get back to where I am now…. (Interviewee F)

> Having to stop or reduce workload to have a family, plus having to come back part time limits the responsibility level you will be given. (Interviewee C)

> I'm worried about having a family and the company not having the flexibility towards this (Interviewee G)

> The role varies so much and the workload, and when you have a family other engagements outside of work it does impact because you have to make the decision between family and work (Interviewee E)

NEGATIVE PERCEPTIONS TOWARDS WOMEN'S INVOLVEMENT IN CONSTRUCTION

Regarding the challenges for women's career development, negative perceptions towards women in construction was highlighted in the interviews. Interviewees made similar comments about the way they were perceived by their male counterparts in the industry and they identified negative perception towards women in construction as a factor stopping them from progressing further for their career. For example: "Males opinions stop me from progressing as they have the assumption that I know nothing, even when you are trying to get assistance" (Interviewee A).

Some comments were about how management may make decisions about hiring and promoting women in the industry which reflects gender discrimination. Interviewee J claimed that "I think men find it difficult to work around the fact that women want to have families, and will eventually have to take time off to do so.". Other examples include:

> Management judge at what phase or age a female is at and will their next life phase cause them not to be able to undertake the tasks required for the promotion. (Interviewee C)

> People who are in management positions pick people who are like them, I don't wear a skirt or have the same family goals, and in this industry being a male dominated majority of management are men. They understand and know what to expect from someone who is like this. It's a risk to employ someone who isn't like them…The mentality back in the day that was women don't work in construction and these are the ones who are our mentors and managing us (Interviewee D)

One participant mentioned that although she wanted to progress her career to a director position, there was a barrier evident relating to being a mother. "…To be a director you can't be a mum and something would have to give…." (Interviewee C)

LONG WORKING HOURS

There was a mixed response around long working hours. One interviewee who was a quantity surveyor mentioned that "I feel like we are just expected to put the hours in if they are needed…." (Interviewee C). Some interviewees mentioned the reason of long working hour in construction was due to the set mentality that longer working hours meant you were working hard. There was a saying that "construction industry never takes holidays" (Interviewee E).

DEALING WITH AGGRESSIVE BEHAVIOUR

One interesting point revealed from the interviews was that women had to deal with aggressive behaviour of the team. Interviewees have expressed fears around dealing with male's aggressive behaviour in meetings and feeling as though they have to behave like a male to gain respect and be heard. Interviewee I expressed that "often women struggle with being outspoken, I see the men and how they talk themselves up, feel as though females are less inclined to do this" whereas Interviewee C mentioned "dealing with unfortunate situations with men and aggression in meetings".

Another participant mentioned that she acts differently around men in the workplace to be able to be heard. Interviewee J expressed that "we just have to learn how to communicate to the other gender to get what you want through". As illustrated by Interviewee D:

> …..how I am at work is completely different to how I am outside of work, because outside of work what I do wouldn't be classed as a female attribute. I'm not going to go and have coffee and swear and curse to my friends to get my point across whereas here (in the workplace) you almost have to act like they do there is no division from their end. (Interviewee D)

Strategies for supporting women's career development in construction

Interviewees made valuable comments on the strategies for supporting women's career development in construction. They commented on the role model/mentor scheme and suggested that more diverse forms of networking should be promoted.

ROLE MODEL/ MENTOR

Getting a role model/mentor was one of the most popular strategies for improving women's career development in construction. Although all the research has demonstrated that it is

beneficial to have a mentor, one participant made comment about how people could perceive the relationship if the age gap was too small and this could put the male mentor in a position where they won't give their full potential to their cadet/junior. Interviewee C expressed that "male mentor whose age gap is close to the female they are mentoring can get worried about that the relationship perceives…"

DIVERSE FORMS OF NETWORKING

Interviewees expressed that more diverse form of social/ networking opportunities should be encouraged in the construction industry. Multiple interviewees commented that when they first entered the industry, they were not invited to join social or networking opportunity. For example:

> **……all the men got invited to a golf day and I didn't, yet we did the same role, same pay, same uni courses, but to be acknowledged as part of the team or part of the industry to meet the subcontractors that we needed to do the contracts, almost missed out on those opportunities because I was a female." (Interviewee C)**

> **All the boys for the first two months I was here would go out to coffee every single day and no one would ask if I wanted to come, there is a culture, and I'm sure individually none of them are sexist but because no one else is asked they just group together. (Interviewee B)**

They suggested that more diverse form of social/networking opportunities need to be offered so as to break the existing norms.

Discussions

Existing literature provided a scattered perception of factors effecting women's career development. This research identified challenges falling into three main categories namely stress, family work life balance and negative perceptions about female's abilities. These findings were consistent with existing literature (NAWIC, 2013).

Finding a balance between personal and professional aspirations/goals was identified as the most significant career challenge for women in the Australian construction. Over half of respondents agreed that difficulty in finding the family-work life balance is a challenge throughout their career in the construction industry, making it difficult to have a family and split their time between work and home. It is the consequence of the male dominated industry, confirmed in studies by Hatipkarasulu and Roff (2011), Moore (2006), and Lingard and Lin (2004).

Male culture of the industry has impaired work life balance. As one interviewee commented "Females do 80% more than males, housework, family stuff plus work, how do you balance?" This is supported by Dainty, Neale and Bagilhole (2000) who found over half of the men working in construction had non-working partners who looked after the domestic matters in their households. Women had to make the choice between having a successful career or a family orientated lifestyle. A respondent commented; "Priorities – if you want to stay home with the kids it will compromise your careers but if you want to continue with your career, you have to sacrifice putting them in child care and not being with them every day". Very often, women would have to stop working to have a family when they realized the inherent difficulties of combining work and family responsibilities. In an industry that already suffers

shortages of professionals, losing qualified individuals at their crucial stage of career presents a monumental problem (Gibson et al., 2003).

The perception of the construction industry to women was undesirable, confirmed by the majority of comments relating to challenges women faced. Resistance to women participating in professional roles in construction was apparent within all areas of the industry, from the business roles to the job site. Prior studies found that causes of stress were extended working hours, inadequate leisure time, paperwork, lack of family life balance, travel, architects, poor communication, and staff shortages (Sutherland and Davidson, 1993). Participants of this study mentioned majority of these and added unpredictable situations and unrealistic expectations as some of the worst parts of working in the construction industry.

This study found that the challenges of women's career development were not significantly different across different age, occupation, work experience in construction and career level. There is a lack of effective measures to tackle the root causes of these challenges. The recent report of UNSW (2016) found that the root causes of these challenges come from the culture of the Australian construction industry which expects long working hours and pressure to finish jobs early. Those who do not live up to this expectation are considered part-timers. To a certain extent, these challenges are also faced by men in the construction industry but they are in greater magnitude for women. These challenges affect all the women in construction, including new-comers and long-time women practitioners. If the culture of the Australian construction industry does not change, it is hard to see any change in the gender diversity in the construction industry.

Dedication, determination, and independency were the top three success factors for women's career development in the construction industry. Personality traits are more important than interpersonal and organizational factors (e.g. mentors, ability to network) for women to be successful in the construction industry. These findings were somewhat in line with Francis (2017) that proactive personality was significantly positively correlated with women's career advancement in the construction industry. Individual factors explained the highest variance of women's career development in construction than interpersonal factors, and organizational factors. Success of women in construction largely depends on their individual character and experience. This indicates that personal growth and development training to strengthen character traits would contribute to women's career development in construction.

Regarding the strategies for improving women's career development in construction, role model or mentor is frequently advocated in the literature and in practice. However, the impacts of role model or mentoring program on advancing women's career development in the construction industry need further investigation. Interestingly, Francis (2017) has recently found that mentoring does not advance women's career development in the construction industry but only keeps them from leaving the industry. Women in construction have a career development different from men. It is interesting that role model or mentor was ranked relatively low in the success factors of women's career development but role model or mentor was considered the most important strategy for improving women's career development in construction. Undoubtedly, having a role model or a mentor will be beneficial but the benefits may be limited if the mentor does not understand the challenges that their mentees are facing. There are limited women in the construction industry who can be a role model or act as a mentor. Male mentors may not be able to fully understand the challenges the female mentees face and female mentees may not feel comfortable seeking support from the male mentor.

Findings of this study indicate that existing strategies for improving women's career development in the construction industry are not directly linked to the challenges or the success factors of women's career development in the construction industry. Thus, the

effectiveness of these strategies in supporting women's career development would be limited. Further research needs to be done on designing an effective mentoring program for women in the construction industry. New strategies addressing the challenges and strengthening the success factors of women's career development are urgently needed to develop a more gender balanced construction industry.

Conclusion

To conclude, women's career development in construction faces different challenges. The top ones are stress, difficult work life balance; negative perceptions towards women in construction, long working hours etc. Women in different levels of career development would face similar challenges. Notably, women in construction found it difficult to deal with aggressive behaviour of male colleagues. This is a peculiar factor revealed from the interviews. To be successful in the construction industry, personal traits, such as dedication, determination, and independence of the women practitioners, are more important than other interpersonal and organizational factors. Thus, personal development strengthening character traits would be particularly useful for women's career development in construction.

Lack of role model/mentor was not a highly-ranked challenge to women's career development in construction. Getting a mentor was also not a highly-ranked success factor for women in construction. However, it is interesting to find that role model/mentor was the top strategy for improving women's career development in construction. This may indicate that there are limited choices of strategies to effectively support women in construction. It seems that these strategies are not fully addressing the challenges that women in construction are facing and they are not dedicated to strengthening the success factors for women in construction. Current strategies for women's career development in construction seem to have minimal effect on alleviating the challenges for women in construction because many challenges require long-term change in the culture of the construction industry. Setting up a mentor program for women in construction seems to be a feasible start to bring about changes provided that the mentor program is carefully designed to suit the needs of women in construction.

To advance women's career development in construction, employers should consider providing personal development programs, and flexible working arrangement, such as flexible working hours, to suit individual needs. More importantly, there needs to be a cultural change in the construction industry. It is hoped that the construction industry will become more gender balanced and women can be given the same opportunities to excel in construction. This study is limited by a relatively small sample size in Queensland, the second largest state of Australia. Future research can extend to the other states of Australia to reveal a more comprehensive picture across the country. Although this study was conducted in Australia, the findings would be applicable to other construction industries which share the same goal of improving gender balance and advancing women's career development in construction.

This study contributes to revealing the current situation of the career development of women in the Australian construction industry. More strategies to fundamentally address the challenges and strengthen the success factors of women's career development identified in this study should be developed. Further research needs to be conducted to design effective mentoring program to facilitate women's career development in the construction industry. Further research needs to be conducted to evaluate the effectiveness of the existing career development strategies for women in construction and promulgate new strategies to directly address the challenges and strengthen the success factors for women in construction.

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